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Ling et al.

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(54) **VEHICLE MONITORING SYSTEM**

(56) **References Cited**

(75) Inventors: **Raymond Scott Ling**, Westlake, OH (US); **Richard Ashton Hutchinson**, Chagrin Falls, OH (US); **Wilbert John Steigerwald, III**, Kirtland, OH (US); **William Andrew Say**, Macedona, OH (US); **Patrick Lawrence O'Malley**, Kirtland, OH (US); **Dane Allen Shralow**, Solon, OH (US); **William Curtis Everett**, Chagrin Falls, OH (US); **Robert John McMillan**, Divide, CO (US)

U.S. PATENT DOCUMENTS

3,388,404 A 6/1968 Bush
3,504,337 A 3/1970 Ekman
(Continued)

FOREIGN PATENT DOCUMENTS

CA 2151458 6/1994
(Continued)

OTHER PUBLICATIONS

Lesser, et al. The Distributed Vehicle Monitoring Testbed: A Tool for Investigating Distributed Problem Solving Networks. The AI Magazine. Fall, 1983.*

(Continued)

(73) Assignee: **Progressive Casualty Insurance Company**, Mayfield Village, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 848 days.

Primary Examiner — Charles Kyle

Assistant Examiner — Robert Niquette

(74) *Attorney, Agent, or Firm* — Brinks Hofer Gilson & Lione

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(57) **ABSTRACT**

A data logging device tracks the operation of a vehicle or driver actions. The device includes a storage device, which may be removable or portable, having a first memory portion that may be read from and may be written to in a vehicle and a second memory portion that may be read from and may be written to in the vehicle. The second memory portion may retain data attributes associated with the data stored in the first removable storage device. A processor reads data from an automotive bus that transfers data from vehicle sensors to other automotive components. The processor writes data to the first memory portion and the second memory portion that reflect a level of risk or safety. A communication device links the storage device to a network of computers. The communication device may be accessible through software that allows a user to access files related to a level of risk or safety and other software that may be related to those files.

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/764,076, filed on Jan. 23, 2004, which is a continuation-in-part of application No. 09/571,650, filed on May 15, 2000, now Pat. No. 6,868,386, which is a continuation-in-part of application No. 09/135,034, filed on Aug. 17, 1998, now Pat. No. 6,064,970, which is a continuation of application No. 08/592,958, filed on Jan. 29, 1996, now Pat. No. 5,797,134.

(51) **Int. Cl.**
G06Q 40/00 (2012.01)

(52) **U.S. Cl.** **705/4; 340/439; 702/188**

(58) **Field of Classification Search** None
See application file for complete search history.

20 Claims, 36 Drawing Sheets

